REMARKS

The present application relates to inbred maize plant and seed PH5DR. Claims 1-30 are pending in the present application. Claims 7, 9 and 19-22 have been amended. No new matter has been added by way of amendment. Applicant respectfully requests consideration of the claims in view of the following remarks.

Detailed Action

Applicant acknowledges that the Terminal Disclaimer of June 13, 2005 has been reviewed and accepted and thus obviated the double patenting rejection of record.

Applicant further acknowledges the provisional rejection under § 101 double patenting of claims 5 and 6 has been withdrawn.

Double Patenting

Statutory Type Double Patenting

The Examiner rejects claim 11 under the statutory type double patenting under 35 U.S.C. § 101 as "claiming the same invention as that of claims 2 and 11 of the parent case, U.S. Patent No. 6,727,413". *See* Office Action, p. 2.

Applicant respectfully traverses this rejection. It is well established that Applicant has the right to claim the invention in a reasonable number of ways, and that a difference of scope between claims has been held to be enough. *See* MPEP § 706.03(k). Further, Applicant also points out that Claim 11 in the present continuation is based on Claim 6 in the case as originally filed. Claim 11 is not identical in scope to claims 2 and 11 of the parent case, U.S. Patent No. 6,727,413. Claim 11 of the present application claims "[a] maize plant having all the physiological and morphological characteristics of inbred line PH5DR, wherein a sample of the seed of inbred line PH5DR was deposited under ATCC Accession Number PTA-4525". In contrast claim 2 of U.S. Patent No. 6,727,413 claims "[a] maize plant, or a part thereof, produced by growing the seed of claim 1" and claim 11 claims "[a] method of producing an herbicide resistant maize plant comprising transforming the maize plant of claim 2 with a transgene that confers herbicide resistance".

Applicant believes the Examiner is making the assumption that the fact that one must use seed of the maize inbred line PH5DR itself to obtain a plant with the same morphological and

physiological characteristics as a plant of the variety PH5DR. However, one of ordinary skill in the art can obtain a plant with all of the same morphological and physiological characteristics as maize inbred line PH5DR without actually using seed of maize inbred line PH5DR. For example, this can be accomplished by using double haploid technology to "recreate" PH5DR through the use of F1 hybrid seed in which PH5DR was a parent. As emphasized in previous office action responses, all members of the genus of F1 hybrids seed will receive one non-recombinant set of chromosomes of PH5DR. By using the seed of an F1 hybrid made with PH5DR, one can recover this non-recombined set of chromosomes from the F1 hybrid seed. Thus, a plant that has all of the same morphological and physical characteristics of PH5DR can be created without direct use of seed of inbred line PH5DR. Applicant directs the Examiner to the following web site which further explains and illustrates double haploid technology at the internet address www.uni-hohenheim.de/%7Eipspwww/350b/indexe.html#Project3 (attached as Appendix 1), as well as to U.S. Patent No. 5,770,788 to Jia and U.S. Patent No. 6,200,808 to Simmonds *et al.*. As noted on the web site, the use of double haploid technology to has been used in plant breeding to produce desired homozygous inbred lines for more than 50 years.

Therefore, Applicant asserts that claims 2 and 11 of U.S. Patent No. 6,727,413 are not duplicate claims, and requests reconsideration and withdrawal of the statutory type double patenting rejection under 35 U.S.C. § 101.

Rejections Under 35 U.S.C. § 112, First Paragraph

A. Written description regarding Claims 19-22

Claims 19-22 stand rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The Examiner states that the "specification does not provide written description support for 'a single locus conversion' because the specification only describes a 'single gene conversion'". *See* Office Action, p. 9.

Although not acceding to the Examiner's rejection, in an effort to reduce the issues upon appeal, Applicant has now amended claims 19-22 to delete the language "locus" and include

--gene--, as supported in the specification on page 21, thereby alleviating this rejection. Applicant further submits that the terms "single gene conversion" and "single locus conversion" are synonymous and would be well understood by one of ordinary skill in the art.

B. Enablement regarding Claims 1-10

Claims 1-10 remain and claims 13-16 and 19-29 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. The Examiner states the rejection is repeated for the reasons of record as set forth in the Office Action of March 14, 2005. *See* Office Action, p. 9.

Applicant respectfully traverses. Applicant maintains the arguments submitted in previous amendment of June 10, 2005 regarding the references (Kevern, Carlone, and Segebart) mentioned by the Examiner.

The Applicant further asserts the specification provides a description of how to backcross traits into PH5DR (Specification, p. 21, ll. 16-31) and it is understood by those of skill in the art that backcross conversions are routinely produced and do not represent a substantial change to a variety. The World Seed Organization, on its web site, writes, "[t]he concept of an essentially derived variety was introduced into the 1991 Act of the UPOV Convention in order to avoid plagiarism through mutation, multiple back-crossing and to fill the gap between Plant Breeder's Rights and patents." ASSINSEL, an International breeders association, has published a position paper that refers to a conversion produced by repeated backcrossing of parental lines of hybrid varieties as a "cosmetic modification". As determined by the UPOV Convention, "essentially derived varieties may be obtained for example by the selection of a natural or induced mutant, or of a somaclonal variant, the selection of a variant individual from plants of the initial variety, backcrossing, or transformation by genetic engineering" (emphasis added). Copies of web pages with these quotes are provided in Appendix 2. Thus, it is clear that there is worldwide agreement that by obtaining the seed of a newly developed variety such as PH5DR, and by using such seed for repeated backcrossing in accordance with claims 19-30, one is producing only a cosmetic modification and plagiarizing the work of the inbred inventor.

The ability of one of ordinary skill in the art to effectively use backcrossing to introgress a single locus conversion is also clearly supported by the scientific literature. For example, see Ragot, M. *et al.* (1995) Marker-assisted backcrossing: a practical example, in *Techniques et*

Utilisations des Marqueurs Moleculaires (Les Colloques, Vol. 72, pp. 45-56 (attached as Appendix 3), and Openshaw *et al.*, (1994) Marker-assisted Selection in Backcross Breeding, Analysis of Molecular Marker Data, pp. 41-43 (attached as Appendix 4). Specifically, Ragot *et al.*, demonstrates that "spectacular" progress toward the recurrent parent genotype was obtained with 61 RFLP markers. Ragot *et al.* concludes that "recovery of the recurrent parent genotype could proceed even faster than in the experiment described herein, should the appropriate protocol and resources (population size, number and position of markers) be allocated."

Furthermore, the specification teaches multiple ways of introgressing or transforming a maize plant with various genes which encode specific protein products which confer advantageous traits desired in the plant. (*See* generally, specification, p. 23-34). This includes the use of markers to aid in the identification, selection and transformation of the maize plant with the desired gene.

Accordingly, Applicant submits that claims 1-10, 13-16, and 18-29 are fully enabled and have fully satisfied the legal standards for enablement. Applicant respectfully requests reconsideration and withdrawal of the enablement rejections under 35 U.S.C. § 112, first paragraph.

Conclusion

In conclusion, Applicant submits in light of the above amendments and remarks, the claims as amended are in better condition for appeal. If it is felt that it would aid in prosecution, the Examiner is invited to contact the undersigned at the number indicated to discuss any outstanding issues.

No other fees or extensions of time are believed to be due in connection with this amendment; however, consider this a request for any extension inadvertently omitted, and charge

any additional fees to Deposit Account No. 26-0084.

Respectfully submitted,

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